nase alfa therapy. A lung function test ("index") separated a 2-year pre-index period from a 2-year post-index period for which intercepts and slopes were independently estimated. The comparator group included patients not yet reported to have received dornase alfa; their index lung function test was associated with their eighth or subsequent even-numbered birthday. Comparator patients could contribute more than one set of pre- and post-index periods and could also subsequently be included in the dornase alfa group. To account for the repeated use of patients, variance components were estimated at the patient level as well as the case level. Different subsets of the comparator cases were analyzed. **RESULTS:** There were 2230 dornase alfa patients; the comparator group included 5970 cases from 3517 patients. The estimated difference in change in slope was 0.73±.31 (P=0.020). Subsetting comparators to 4985 cases from 2836 patients not also in the dornase alfa group gave 0.61±0.32 (P=0.058); including each of those patients only the last time eligible gave 0.68±0.36 (P=0.059). Subsetting to 3662 cases from 2030 patients never on dornase alfa gave 0.32±0.34 (P=0.35). Patient-level variance components corresponding to difference in slope and difference in intercept were near zero and so were dropped. **CONCLUSIONS:** In longitudinal observational studies, patients should be included in each group for which they meet eligibility criteria, possibly multiple times (with appropriate covariance structures). This avoids bias from using future information to decide whether to include a patient and loss of power from limiting cases unnecessarily.

PRM140

AN APPLIED COMPARISON OF META-ANALYSIS TECHNIQUES USING BACILLE CALMETTE GUERIN VACCINE STUDIES

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Numerous assumptions and techniques are necessary to perform meta-analysis. Some overall structural guidelines and best practices on meta-analysis exist. However, few papers compare meta-analysis techniques in application. **OBJECTIVES:** To review primary meta-analysis methods and their assumptions. After methodology review, we applied various meta-analysis techniques to the data of various Bacille Calmette Guerin (BCG) vaccine studies and compared the results. **METHODS:** Of the currently available meta-analysis techniques, the most basic technique was applied first. Fixed effect models assume treatment effect homogeneity across studies. Then, random effect models and meta-regression were explored. Each technique explicitly models treatment heterogeneity. Lastly, the possibility of publication bias was tested through the use of a funnel plot. **RESULTS:** Treatment effect estimates differed depending on the meta-technique applied. When a fixed effect model was applied to estimate vaccination effectiveness against tuberculosis, the log odds ratio was −0.436 (confidence interval [CI]: −0.528, −0.344). After testing for heterogeneity and fitting a random effects model, the estimate was reduced to −0.741 (CI: −1.120, −0.352), and the CI became wider. When covariates were added to the model to explain the heterogeneity, the effect of treatment was reduced even further. **CONCLUSIONS:** Meta-analysis results are sensitive to the selected studies and the methodology applied. Ensuring that proper techniques are used is critical to estimate an unbiased outcome.

PRM141

COMBINING AN ORDERED LOGIT MODEL WITH INDIVIDUAL PATIENT-LEVEL DATA TO ROBUSTLY ESTIMATE WITHIN-CATEGORY VISUAL ACUITY STARTING DISTRIBUTIONS: AN INNOVATIVE MODELING APPROACH IN THE CASE OF VITREOMACULAR TRACTION

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OBJECTIVES: The ISPOR Task force (TF) on Good Research Practices for RCT-CEA aims to foster improvements in the conduct of trial-based economic analysis. The TF recognizes the sample size of randomized clinical trials (RCT) as one of the challenges for trial-based economic analysis, as it is typically based on the primary clinical outcomes only. In the case of vitreomacular traction (VMT), using RCT individual patient-level data (IPD) to establish model starting distributions within visual acuity (VA) health-states magnifies this challenge due to the small patient numbers within each relevant VA health-state. Our objective was to develop an innovative approach to robustly estimate patient within-category VA health-state starting distributions. **METHODS:** A baseline VA-adjusted ordered logit model used RCT IPD to predict a patient's VA starting distribution as a function of treatment allocation, macular hole, vitreomacular adhesion and previous vitrectomy status. The observed ordinal variable consisted of 6 response categories i.e. VA state as a function of an unmeasured, continuous, latent variable Y whose values determine the patient's VA-state dependent specific VA thresholds. **RESULTS:** Treatment allocation was not a significant predictor for within-category VA health-state starting distributions (at the 5% significance level), while MH, VMA and previous vitrectomy status were significant and retained in the final model. The proportional odds assumption was tested using a likelihood ratio test and confirmed that the relationship between each pair of VA health-states was the same (chi2 = 0.0906). **CONCLUSIONS:** In eye-disorders like VMT, estimating within-category VA health-state starting distributions requires a different approach due to the small number of IPD in each VA health-state. Using an ordered logit model allows a more accurate and robust estimation of within-category VA health-state starting distributions. Macular hole, VMA and previous vitrectomy status were significant predictors of a patient's within-category VA health-state starting distribution, while treatment allocation was not.

PRM142

USE OF BODY SURFACE AREA AS A DETERMINANT OF DOSE IN CANCER STUDIES

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OBJECTIVES: With the lack of alternative strategies for calculating the dose of cytotoxic drugs in chemotherapy regimens, body surface area (BSA), despite well-documented limitations, remains the most frequently used measure for dosing guidelines. This is based on the assumption that physiological variables related to drug metabolism and elimination, such as basal metabolic rate, renal and hepatic function, vary between individuals according to BSA. BSA has traditionally been calculated using a formula derived from Du Bois and Du Bois and published in 1916. It is recognised this is probably not the most accurate method of calculating chemotherapy doses, since the formula was derived from metabolic studies using a small number of subjects. The practice of calculating chemotherapy dose adjusted to BSA has drawn attention due to its lack of clear scientific basis, and lack of applicability to different genders, disease states, and culture. **METHODS:** A systematic literature review was conducted using CRD methodology to establish the average BSA in cancer patients in Europe and the variability between genders, tumour types, and cultures. **RESULTS:** Meta-analysis of the findings showed significant differences between genders overall (females 1.72m^2 vs males 1.88m^2), between different tumour types (range 1.68m^2 to 1.93m^2) and between different European countries (range 1.74m^2 to 1.83m^2). However, statistical modelling showed that a BSA of 1.80m^2 approximated the population mean and identified the dispersion to be 1.72-1.87m^2 and was therefore a valid approximation for the majority of cancer patients in Europe. **CONCLUSIONS:** Establishing a patient's BSA is important in determining the appropriate dosage regimen, but the population norm serves as a useful basis for drugs administered in a fixed dose formulation.

PRM143

CLUSTER ANALYSIS AND PRINCIPAL COMPONENT ANALYSIS TO ASSESS THE VARIABILITY OF DATA IN COST EVALUATIONS: METHODS AND APPLICATIONS IN ONCOLOGY

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OBJECTIVES: In the context of today's highly globalized environment, the interest in the transferability of data of cost evaluation in health care has strongly intensified. A methodology is proposed to explore similarity versus dissimilarity of cost evaluation data in adult sarcoma and hence their transferability across locations (France and Italy). **METHODS:** Main steps are (i) definition of the objects (e.g. countries), identification of potential variability factors, selection of final variability factors, and construction of variability areas (e.g. unit cost of personnel); (ii) measure of distances between the objects, determination of clusters and construction of a hierarchical tree using the cluster analysis (CA); (iii) projection of the objects into factorial planes and linkage between objects and areas of variability using principal component analysis (PCA). Suggested methods are applied to an international cost evaluation performed within the European network of excellence CONnectiveTIssuesCAncersNETwork (CONTICANET). **RESULTS:** Twelve objects and 16 areas of variability were defined. CA shows four clusters meaning that data belonging to different clusters are dissimilar (i) chemotherapy in France, (ii) follow-up with relapse in Italy, (iii) diagnosis, surgery, chemotherapy, radiotherapy, and follow-up without relapse in Italy, (iv) diagnosis, surgery, radiotherapy, follow-up without relapse, and follow-up with relapse in France. PCA opposes (i) follow-up with relapse in Italy to diagnosis, radiotherapy, and follow-up with relapse in France; (ii) chemotherapy in France to follow-up without relapse in France. In sarcoma patients, transferability is then limited for chemotherapy during the initial treatment in France and the follow-up with relapse in Italy. Diagnosis cannot be transferred either between France and Italy regarding the quantities and unit costs of the biopsies. **CONCLUSIONS:** Using CA and PCA enables health care professionals to rapidly emphasize the variability of data and therefore to determine the transferability of cost evaluations across locations.

PRM144

CARDIOLOGISTS' KNOWLEDGE AND AWARENESS OF GUIDELINES FOR MEDICAL DEVICE SAFETY AND PRODUCT RISK MANAGEMENT

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OBJECTIVES: To investigate the knowledge, awareness and attitudes of cardiologists about the risk and benefits associated with medicines and medical devices and equipment, and of how well they are regulated and communicated in Turkey. **METHODS:** An on –line questionnaire has been developed which include questions about the level of education and experience; perceptions of the risks and benefits associated with medicines and medical devices; experiences of medicines and medical devices; perceptions of and attitudes towards the regulation of medicines and medical devices; attitudes towards the communication of information about the risks and benefits associated with medicines and medical devices; usage of and trust in communication of information about the risks and benefits associated with medicines and medical devices. **RESULTS:** A total of 250 members of the Turkish